

1. A method of controlling an ink melt heater in a solid to liquid ink phasing delivery system for supplying ink to a printer, wherein the phasing system includes a heater disposed to engage a solid ink stick and heat an engaging portion of the ink stick to a liquid phase for communication to a reservoir associated with a print head, the reservoir including an ink level detector, and a controller for selectively supplying power to the heater plate, the method comprising:

supplying a predetermined amount of power through the controller to the heater for melting the ink stick to liquid ink for filling the reservoir;

measuring with the ink level detector an amount of liquid ink in the reservoir;

when the amount of liquid ink is measured to be at a predetermined level, calculating thereafter an amount of ink delivered from the reservoir for printing; and,

when the calculating indicates that the amount of ink delivered from the reservoir approximates an amount of ink stored therein at the predetermined level and the level detector indicates that the ink in the reservoir remains below the predetermined level thereby indicative of an ink stick jam, halting the supplying of power to the heater.

2. The method as claimed in claim 1 wherein the calculating comprises counting pixels printed by the printer with ink from the reservoir.

3. The method as claimed in claim 1 wherein if during the calculating the measuring indicates that the ink in the reservoir has refilled to more than the predetermined level, halting the calculating.

4. The method as claimed in claim 1 wherein upon the halting of the supplying of power, checking the delivery system for an ink stick jam.

5. The method as claimed in claim 1 further including timing the calculating and comparing the timing with a calculated time for refilling the reservoir to the predetermined level with the melting of the ink stick less the delivered ink for printing, and wherein when the comparing indicates that the amount of ink in the reservoir should have been refilled to the predetermined level and the measuring

indicates that the ink in the reservoir remains below the predetermined level, initiating the halting of the supplying of power and checking the delivery system for an ink stick jam.

6. The method as claimed in claim 5 wherein the comparing includes assuming a preselected inflow of ink from the heater.

7. The method as claimed in claim 6 wherein the assuming comprises assuming three grams per minute as the inflow of ink.

8. A method for detecting an ink stick jam in a solid to liquid ink phasing delivery system for supplying ink to a printer for a print job, wherein the phasing system includes a heater disposed to engage a solid ink stick and heat an engaging portion of the ink stick to a liquid phase at a desired melt rate for communication to an ink reservoir associated with a print head of the printer and a controller for selectively supplying power to the heater and for determining an amount of ink used by the print head during printing of the print job, and wherein an ink level detector is disposed for determining an amount of ink in the reservoir, the method comprising:
powering the heater to effect the desired melt rate for filling the reservoir;
determining the amount of ink in the reservoir during the printing of the print job;

when the determined amount falls below a certain level, calculating the amount of ink remaining in the reservoir during the print job by subtracting therefrom the amount of ink used by the print head during the print job;

when the calculated amount of ink is determined to be less than a preselected amount for safely completing the print job, halting the print job;

affording a preselected time for refilling the reservoir to the certain level by the powering of the heater and upon elapse of the preselected time without the refilling to the certain level, halting the powering of the heater; and,

after halting the powering, detecting whether the ink stick jam has occurred.

9. The method as defined in claim 8 wherein the calculating comprises counting pixels printed by the printer with ink from the reservoir.

10. The method as defined in claim 8 wherein when during the calculating, the determining the amount of ink in the reservoir determines that the reservoir has refilled to the certain level, halting the calculating.

11. The method as defined in claim 8 wherein the affording includes assuming a preselected inflow of ink by the powering of the heater.

12. A printing apparatus including a solid to liquid phasing delivery system for supplying ink to a print head, wherein the delivery system includes means for detecting when the supply of ink to the print head is inhibited by an ink stick jam, comprising:

a heater disposed to engage the solid ink stick and melt a proximate portion of the ink stick to a liquid phase;

a reservoir disposed to receive the liquid phase ink and communicate the ink upon demand to the print head, the reservoir including means for detecting an amount of ink therein;

a controller in communication with the heater, reservoir and print head for controlling the supply of ink through the apparatus by halting heater melting upon the detecting of an ink level in the reservoir at a certain level and after calculating further reservoir depletion from continued printing by the print head with ink from the reservoir while continuing to detect an absence of refilling of the reservoir to the certain level for a preselected period of time, whereby the absence is indicative of the ink stick jam.

13. The printing apparatus as claimed in claim 12 wherein the controller calculates that the depletion comprises an unsafe risk of print head ink starvation before completion of a print job by the printing apparatus.

14. The printing apparatus as claimed in claim 12 wherein the controller calculates reservoir depletion by counting pixels printed by the printer with the ink from the reservoir.

15. The printing apparatus as claimed in claim 14 wherein the controller further calculates an inflow of ink to the reservoir with the depletion by counting pixels.